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NTE876
Linear Integrated Circuit
LED Flasher/Oscillator

Description:

The NTE876 is monolithic oscillator specifically designed to flash Light Emitting Diodes. By using the timing capacitor for voltage boost, it delivers pulses of 2 or more volts to the LED while operating on a supply of 1.5V or less. The circuit is inherently self–starting, and requires the addition of only a battery and capacitor to function as an LED flasher.

Packaged in an plastic 8–Lead mini–DIP, the NTE876 will operate over the extended consumer temperature range of –25°C to +70°C. It has been optimized for low power drain and operation from weak batteries so that continuous operation life exceeds that expected from battery rating.

Timing capacitors will generally be of the electrolyic type, and a small 3V rated part will be suitable for any LED flasher using a supply up to 6V. However, when picking flash rates, it should be remembered that some electrolyics have very broad capacitance tolerances, for example –20% to +100%.

Features:

- Operation over one year from one C size flashlight cell
- Bright, high current LED pulse
- Minimum external parts
- Internal Timing Resistor
- Internal LED Current Limiting Resistor
- Low voltage operation, from just over 1V to 5V
- Low current drain, averages under 0.5mA during battery life
- Powerful as an oscillator directly drives an 8Ω speaker

Applications:

- Finding flashlights in the dark, or locating boat mooring floats
- Sales and advertising gimmicks
- Emergency locators, for instance on fire extinguishers
- Toys and novelties: e.g., Siren for toy fire engine
- Electronic applications such as trigger and sawtooth generators
- Warning indicators powered by 1.4V to 200V

Absolute Maximum Ratings:

Supply Voltage, V+ 6.4V
Power Dissipation, P_D 500mW
Operating Temperature Range, T_{opr} . . . . . –25° to +70°C
Lead Temperature (Soldering 10 sec), T_L . . . . . +260°C

Electrical Characteristics:

Parameter	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	In Oscillation	1.15	–	6.0	V
Operating Current		–	0.55	0.75	mA
Flash Frequency	300µF, 5% Capacitor	0.65	1.0	1.3	Hz
High Flash Frequency	0.30µF, 5% Capacitor	–	1.1	–	kHz
Compatible LED Forward Drop	I_F = 1mA	1.35	–	2.1	V
Peak LED Current	350µF Capacitor	–	45	–	mA
Pulse Width	350µF Capacitors at 1/2 Amplitude	–	6.0	–	ms

Pin Connection Diagram